AGRICULTURAL STATISTICS RELATED TO MARKETING

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What is the market for Agricultural Statistics?

First, there are 5.4 million farm operators. They must have statistics if they are to decide intelligently what to produce, and when and where to sell it.

Second, there are almost 5 million persons engaged in processing and distributing farm products--and the foods and fibers made from farm products. They must have statistics if they are to operate efficiently.

Third, there are in the United States 158 million consumers of foods, fibers, and other goods made from farm products. Many of them use statistics sparingly if at all. But a substantial number of consumers make at least some use of statistics as a guide to buying.

Thus, the market for agricultural statistics is big. Or looked at in another way, it is also a series of specialized markets. The dairy farmer, the railroad freight agent, the hog packer, the chain store manager, and the housewife each has a special interest. Each needs a particular kind of statistics designed to answer special problems.

Agricultural production and agricultural marketing in the United States are highly specialized, very complex. We still have a few "subsistence farmers," who produce mainly what their families eat--and have little to sell. A few farmers still peddle milk and eggs directly to the final consumer. Even in primitive arrangements like these, considerable use is made of statistics of market prices.

But these situations are far from typical. The typical American farmer who sells through regular marketing channels is a commercial producer, not unlike any manufacturer. The main difference is that he has no patents nor trademarks to distinguish the products of his farm from those of other farms. He produces wheat, or cotton, or hogs. After they get to market, they are mixed with all the other wheat, cotton, and hogs. But, as far as production is concerned, the typical farmer is quite similar to the typical manufacturer. Both are specialists. Both are on the watch for new methods. Both have to figure on possible ways to cut their expenses. And both are searching for the most profitable market.

The marketing system is even more complex--and specialized. It is operated by millions of individual businessmen in competition with one another. Each of them is trying to get along, and make a profit. This is good American free enterprise and competition. It works smoothly and well only if the millions of businessmen are fully and accurately informed. Our marketing machinery is

more efficient now than it was a generation ago. It is probably more efficient in the United States then in most other countries. But it will not run properly without adequate and reliable information--just as a railroad will not run right unless the signals are working.

The U. S. Department of Agriculture supplies much of the information now available. It works with various state agencies, including the State Departments of Agriculture and the State Agricultural Colleges. We shall look briefly at two kinds of market information made available by the Department and cooperating agencies: First, the periodic reporting of statistical material on such subjects as farm production and market prices; second, the publication of information growing out of marketing research.

I. Statistical Services

The Department prepares statistical series on a large number of different subjects of interest to those engaged in marketing. There are so many of these that it is impossible to talk about all of them in a short length of time. As examples, we have selected a few that I feel will be of most interest to you. In so doing I have left out such things as farm population statistics, the balance sheet of agriculture, our transportation rate index, index of farm land values and many more. The Department's exhibit includes some of these which are not discussed.

Agricultural Estimates

In the Bureau of Agricultural Economics we have a crop and livestock reporting service which estimates the prospective and actual volume of production of more than 150 farm crops, farm and non-farm stocks of these commodities, numbers of livestock and production of meat and other livestock products, farm employment and wages, prices received for farm products, and prices paid by farmers for articles used in production or in family living. These data are used continually by processors and distributors. For example, estimates of production indicate to the railroads and truck lines how much transportation equipment will be necessary to haul the products to market, and then indicate to the processor when and where he should buy his supplies. These estimates are given several months in advance so that the food trade may be prepared for what is to come. Estimates of production of citrus fruits (together with the number and age of trees) provide producers, processors and distributors with necessary information for estimating future trends. This is necessary for intelligent planning of acquisition and construction of processing and frozen storage facilities. Intentions to plant and breeding intentions for livestock provide distributors with information to allow them to plan a season's operation so that the products may be marketed in an orderly manner. Price relationships can be estimated and purchases made well in advance of receipt of goods in the markets.

These estimates which I have mentioned are made from reports received on one subject or another from several hundred thousand farmers, plus reports from large numbers of processors and handlers of farm products. We don't have to warn you that crop reports are never absolutely exact. In our estimates, of course, one hundred percent accuracy is impossible. But, with the help of state agencies we are using modern techniques to make them as nearly accurate as is humanly possible within the limits of available funds.

Market News Reports

Reports of shipments, unloads, market prices, and similar market information have become the key to distribution through our privately-operated marketing system. The market news service operated by the Production and Marketing Administration in the Department provides a large amount of market information in cooperation with the various states and many distributive organizations and carriers. To indicate just a few examples of materials made available through market news service, each railroad in the United States reports daily the number of cars of fruits and vegetables shipped by commodity and state of origin. These reports are based on a midnight cut-off and the information is wired to Washington in time for preparation of a daily shipment release at 9:00AM. These reports, of course, are made only on perishable commodities. They indicate the number of cars rolling, in certain specified marshalling yards, and, in general, the destinations for a part of the commodities.

Market prices of most of our major commodities, particularly perishables, are reported daily and the information disseminated by radio, press, TV and mimeographed reports each day. Market news reporters obtain their price and supply information from wholesalers and other dealers in the principal terminal markets and from producers and shippers in the more concentrated producing areas. This coverage embraces those points most significantly influencing price levels and trends. In addition to the daily dissemination direct from the local office securing it, this market news information is distributed to all other market news offices by means of a nation-wide teletype system. This interchange of data allows individual offices to publish information required by their local trade members from any section of the country.

The price reports and shipment data enable distributors in the consuming markets to place their orders in accordance with the supply situation, taking into account prices to be expected, eliminating some of the risk caused by lack of information. A distributor who knows what to expect naturally can accept a smaller margin for his services than if he is taking a big risk on every deal he enters into. The provision of these services on the other hand provides buyers and sellers in the producing area with more intimate knowledge as to the conditions in the market yesterday which can be reflected in their actions today.

Market basket

We issue monthly a series indicating the cost of the consumer's market basket. Prepared from BLS and BAE retail prices, these data cover domestically produced foods which are included in an average consumer's market basket. By comparing this series with our farm price data we can measure changes in price spreads between the farm and retail levels.

Consumer reports

In the Bureau of Human Nutrition and Home Economics, a number of studies have been undertaken on food consumption by families in various sections of the country. While these studies are designed primarily for the nutrition expert,

they are also useful in marketing and advertising. For example, these studies often show the need for increasing consumption of certain foods in certain areas and suggest some of the things that need to be done to make such increases possible. The Bureau of Agricultural Economics maintains a series of reports on food consumption, which are published regularly and indicate from disappearance data the United States per capita consumption of various foods. These along with other data on consumer activity indicate the changes taking place in food consumption habits and may throw some light on the effectiveness of various measures designed to influence consumer expenditures.

The Bureau of Agricultural Economics under contract with Market Research Corporation of America reports monthly consumer purchases of frozen and canned juices and selected fresh and dried fruits. These data are used throughout the distributive trade as an indication of what is happening to consumption and as a guide to developing a sound program of production, storage and distribution.

Situation and Outlook Reports

We prepare a number of reports commonly known as "situation reports" or "outlook reports" which are widely used by farmers and by businessmen in keeping abreast of major developments affecting a particular industry, in analyzing the longer-term outlook for prices and sales, and in keeping statistical series needed to provide essential background information up-to-date. Government actions affecting the industry are carefully analyzed, and back issues of the reports are used as a ready reference for information on such programs. Many business firms use the reports to keep up-to-date those series to which they refer only occasionally or to fill in data on less important commodities. For example, a firm interested in fats and oils might compile daily and weekly data on prices, production, etc., for major items such as lard and cottonseed and soybean oil, but might rely on the Fats and Oils Situation for data on some or all of the 25 or more related items. Special articles frequently are included giving a discussion of long-term trends affecting a particular segment of the industry, together with background statistical information. These are particularly useful for reference purposes. Special statistical handbooks, such as Feed Statistics, are issued annually to supplement some of the reports. The commodity experts who prepare the reports are available for consultation by mail or in person regarding the compilation of special statistical series, interpretation of possible economic effects of specified Government programs, or other matters relating to the industry.

Situation reports dealing with the following specific commodity groups are issued: Livestock and Meat, Dairy, Poultry and Egg, Feed, Wheat, Fruit, Vegetable, Fats and Oils, Cotton, Tobacco, Wool and Sugar. The general agricultural situation together with brief commodity statements is presented in the monthly Demand and Price Situation. A quarterly survey of food supplies, consumption and prices is made in the National Food Situation.

Farm Income Estimates

Among our most valuable statistical series are those covering farm income. The Bureau of Agricultural Economics estimates cash receipts from farm sales, gross farm income, production expenses, and net realized farm income. Obviously

these estimates have an important bearing upon public policies. But they are also used regularly by many marketing agencies as a guide to selling programs in rural areas. Advertising and selling agencies have indicated they would like more detail than we can now give them. Especially, they want estimates of cash receipts and net farm income by states. While we cannot now supply this amount of detail, we know that the present reports are being widely used. In addition to farm income estimates we are publishing level-of-living indexes by counties, which should be useful to many marketing people.

II. MARKETING RESEARCH

So much for regular periodic statistical reports. In addition, the Department of Agriculture publishes from time to time a wide range of reports based upon market analyses. Again, it is not possible to cover here all of these reports. We shall mention only a few examples.

Analysis of Market Demand

The Bureau of Agricultural Economics has pioneered in statistical research dealing with demand. Intensive work in this area was started by O. C. Stine back in the early 1920's, and a great deal of emphasis has been placed upon demand research ever since that time. From time to time, members of the BAE staff publish technical papers dealing with technical problems of method. Such papers have appeared recently both in Agricultural Economics Research, (a quarterly periodical of the BAE) and in various professional journals. In addition, the BAE has published a number of technical bulletins which analyze in some detail the demand for a particular commodity, or for a group of commodities. For example, last month we published a bulletin, "The Demand and Price Structure for Corn and Total Feed Concentrates," by Messrs. Foote, Klein and Clough. Studies of this kind are not only of interest to professional marketing experts--they are also invaluable as a basis for our Situation and Outlook reports.

Cost and Efficiency Studies

The variations in size of operations, methods of performing particular services and physical facilities available, bring about wide variations in costs of performing individual marketing services. In cooperation with producer and distributor groups, we have undertaken studies of costs of performing a number of services designed to discover practical ways of increasing efficiency. The Department is studying alternative methods of handling and merchandising which would increase the efficiency of specific operations to allow a higher price to be paid to the producer or a lower price to be charged the consumer. As an example we have undertaken studies of apple packinghouse operations in cooperation with the University of California and have developed methods which have been put into effect that allow considerable reductions in the cost of performing this operation. The results were published in a series of reports, for example, "Efficiency in Fruit Marketing--Grading Costs for Apples and Pears," by R. G. Bressler and B.C. French of the University of California, which is an example of the work we are doing in cooperation with the states. The Production

and Marketing Administration has been working with carriers in developing successfully improved types of refrigerated railroad cars and trucks to allow cheaper and better protection of fruits and vegetables in transit. Additional work by PMA with packers, shippers, processors, warehousemen, wholesalers and retailers has indicated methods of improvement in handling and marketing methods and practices so as to reduce the cost of these necessary operations. A recent report, " The Check-Out Operations in Self Service Retail Food Stores," by E. M. Harwell of Production and Marketing Administration, is a good sample of this work.

Marketing Facilities Studies

PMA has made nearly 50 studies in the last five years to determine the proper location, type, size, and layout necessary for most efficient concentration, terminal and other market facilities for handling all kinds of farm products. During the present year, new market facilities have been built in San Antonio, Texas; Columbia, South Carolina and Hartford, Connecticut, using the results of studies made by W. C. Crow and others in this group. Not only do these studies relate to physical layout of the market facilities but also relate to an evaluation of alternative work methods and handling equipment for different marketing operations, which have assisted in developing and comparing the efficiency of new work methods and types of handling equipment in performing these functions.

Quality Control Studies

Wastes and losses between harvest and retail sale are quite high in a number of perishable commodities. For example, in one study of tomatoes produced in South Carolina and marketed in New York City we found that out of every 100 pounds of tomatoes picked only 53 reached the consumer. Means of reducing such losses have been studied by the Bureau of Plant Industry. These studies cover harvesting and packing methods to reduce bruising, testing of chemical treatments and other means of reducing decay, deterioration of optimum storage and transit conditions, testing of prepacking materials and methods, and determination of the basic physiology of fruits and vegetables in storage. A number of the recommendations made as a result of these studies have been put into effect by the trade. For example, during extremely cold weather in the Red River Valley, potatoes could not be moved from warehouses to railroad cars resulting in inability to fill orders and lost sales. To correct this situation, a newly developed tunnel enables loading to continue in most any weather and freeze damage during the movement of potatoes has been prevented.

Examples of recent reports in this field are, "Determination of Long Island Potatoes in Market Channels," by M. E. McGaha, and "Quality of Red River Valley Potatoes in Various Types of Consumer Packages," by Lutz, Findlan, and Ramsey, published in the American Potato Journal.

Market Development and Utilization Studies

In the Bureau of Agricultural Economics we have recently organized a unit to cooperate with producer, processor or distributor groups in carrying out studies designed to measure or estimate market potential for new or relatively new products, to study the factors reducing the consumption of certain products such as bread or potatoes, and to measure the cost of alternative waste disposal or byproduct utilization methods. Naturally in this work we cooperate very closely with the physical science research agencies of the Department, state colleges and the industries involved. As an example of the work done in this field we completed last year a study of the possible manufacture and marketing of frozen concentrated apple juice made from cull and "C" grade Delicious apples blended with other varieties grown in the Northwest. We tested 21 different juices manufactured by the Department's Western Regional Research Laboratory of the Bureau of Agricultural and Industrial Chemistry to discover the best juice among these blends and then placed this juice on sale in a commercial market test in Tyler, Texas and Modesto, California. The results of this study indicated that commercial production and distribution was feasible and stood a reasonable chance of success. A large national concern is now distributing this juice in the Pacific Northwest and plans are under way for construction of processing facilities to be financed by the growers themselves. Bulletin, "Frozen Concentrated Apple Juice--Its Appeal to Consumers," by James A. Bayton, Philip B. Dwoskin, and Shelby A. Robert, give the results of this work.

Consumer Preference Studies

The Bureau of Agricultural Economics has made a number of studies in the last few years designed to determine consumer preferences toward various products made from agricultural commodities. I am using "consumer" in this sense to indicate industrial, institutional and household consumers. These studies provide information to distributors, advertising agents and the like on consumer opinions and attitudes concerning the characteristics, quality standards and methods by which the products are merchandised. In addition, these studies determine the degree of misinformation regarding products, the extent of use or non-use, frequency and recency of purchases, and the reasons for their opinions or attitudes. We have worked quite closely with the cotton and wool industries in conducting a series of studies on consumer and industrial uses of fibers. The methods of marketing cotton materials and the advertising of cotton materials have been influenced considerably as a result of the knowledge gained from these studies. An example of this work is, "Survey of Canvas Awning Fabricators," by Trienah Meyers and James A. Bayton.

Contract Research

We would like to mention a kind of research which is relatively new to us. The Research and Marketing Act of 1946 provides for research contracts with non-Governmental research agencies. I am told that a number of marketing research organizations are represented here today and thought you might be interested in the methods we use in contracting certain marketing research. We are empowered under this Act to contract to public or private organizations studies which may be done effectively, more quickly or at less cost under contract than if undertaken by Department personnel. In general marketing studies which have been contracted have been in areas where we would have had to build up a large staff of

specialized personnel that we would not need to maintain over a long period of time. In these instances where we can find a private organization that specializes in specific services which we desire, we have contracted with the organization to conduct the studies for us. We have placed on the exhibit table a number of copies of reports that are the result of contract research. Examples of our contract research include a study of marketing potential for oilseed protein materials in industrial uses carried out by Arthur D. Little, Inc.; a study of the transportation needs of the West by Stanford Research Institute; and a study of futures trading being carried out by the Brookings Institution. A number of others might be mentioned. In general, we have found this contract authority to be quite useful and have gained a great deal by working with private organizations in our research program.

Concluding Remarks

So far we have tried to do two things: First, to summarize briefly some of the basic statistical series published by the U. S. Department of Agriculture, and second, to give a few examples of the results of market research.

In closing, we would like to mention two special problems.

First, comes the perennial, difficult, and embarrassing problem of revising statistics. A few years ago one of the largest national magazines came out with the dictum that Governmental statistics should be "inviolate" and that "once published they should never be changed. I disagree most heartily with this attitude. It is only natural that the statistician is pressured to get his figures out promptly so that they can be useful in solving current problems. In doing this, however, the statistician commonly must make estimates without waiting until he has all the facts. He must compromise between promptness and accuracy. But after publishing his estimates, the statistician should look for new evidence to improve his estimates. When he discovers new evidence, an honest and scientific statistician will proceed to revise his figures.

Finally, we would like to mention the problem of acquainting the public with the statistics that are now available and the uses that can be made of them. This is, of course, the topic of today's conference. With the mass of detailed statistics available today, it is a very serious problem. We are now working on a Statistical Handbook that will include all the general statistical series published by the Bureau of Agricultural Economics and will provide a detailed technical description of each series, together with a discussion of its uses. We hope to publish this handbook by the middle of 1953. We believe it will meet a long-felt need. Among those who will doubtless find it useful are you marketing people--including those of you who work in private industry as well as those of you who are professors and public officials.